

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: G.A. Demopulos et al. Attorney Docket No: OMER-1-18473
Application No: 10/031,546 Group Art Unit: 1614
Filed: January 18, 2002 Examiner:
Title: SOLUTIONS AND METHODS FOR INHIBITING CARTILAGE
DEGRADATION

TECH CENTER 1600/2900

APR 25 2002

RECEIVED

INFORMATION DISCLOSURE STATEMENT

Seattle, Washington 98101

April 19, 2002

TO THE COMMISSIONER FOR PATENTS:

Applicants are aware of the information listed in the attached form that may be material to the prosecution of the above-identified patent application.


1. x Copies of the listed patents, publications, and other information are enclosed for the Examiner's use.
2. X A concise explanation of the relevance of document I.D. No. F100 (which is not in the English language), as presently understood by the individual designated under 37 C.F.R. § 1.56(c) most knowledgeable about the content of this document, is provided in a set of English claims included at the end of the document.
3. X Pursuant to 37 C.F.R. § 1.97(b), this Information Disclosure Statement is being filed within three months of the filing date of the national application (other than a CPA), within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, before the mailing date of a first Office Action on the merits, or before the mailing date of a first Office Action after the filing of an RCE.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

4. X The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.18 which may be required during the entire pendency of the application, or credit any overpayment, to Deposit Account No. 03-1740. This authorization also hereby includes a request for any extensions of time of the appropriate length required upon the filing of any reply during the entire prosecution of this application. A copy of this document is enclosed.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}


Dennis K. Shelton
Registration No. 26,997
Direct Dial No. 206.695.1718

I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202, on the below date.

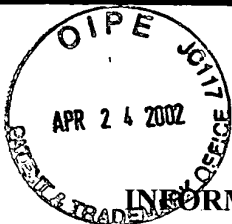
Date:

4/19/02



DKS:jdg/ws

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100



INFORMATION CITED BY APPLICANTS THAT MAY BE MATERIAL
TO THE PROSECUTION OF THE SUBJECT APPLICATION

Applicants: G.A. Demopoulos et al. Attorney Docket No: OMER-1-18473
Serial No: 10/031,546 Group Art Unit: 1614
Filed: January 18, 2002 Examiner:
Title: SOLUTIONS AND METHODS FOR INHIBITING CARTILAGE
DEGRADATION

TECH CENTER 1600/2900

APR 25 2002

RECEIVED

U.S. PATENT DOCUMENTS

*Examiner Initial	ID	Document No.	Date	Name
_____	U5	5,051,443	09/24/1991	Neufeld et al.
_____	U6	5,272,139	12/21/1993	Cary, Jr.
_____	U11	4,872,865	10/10/1989	Bloebaum et al.
_____	U13	4,971,955	11/20/1990	Soll et al.
_____	U19	5,411,743	05/02/1995	Moore et al.
_____	U61	5,502,080	05/26/1996	Hitzig
_____	U62	5,618,563	04/08/1997	Berde et al.
_____	U86	5,271,961	12/21/1993	Mathiowitz et al.
_____	U136	5,605,690	02/25/1997	Jacobs et al.
_____	U164	5,800,385	09/01/1998	Demopoulos et al.
_____	U192	6,083,534	07/04/2000	Wallach et al.
_____	U218	5,270,300	12/14/1993	Hunziker
_____	U219	5,700,774	12/23/1997	Hattersley et al.
_____	U220	5,837,258	11/17/1998	Grotendorst
_____	U224	5,368,858	11/29/1994	Hunziker
_____	U225	5,393,739	02/28/1995	Bentz et al.
_____	U252	5,446,070	8/29/1995	Mantelle
_____	U256	5,480,901	1/2/1996	Baker et al.
_____	U270	5,667,764	9/16/1997	Kopia et al.
_____	U271	6,117,425	09/12/2000	MacPhee et al.
_____	U272	5,932,551	08/03/1999	Caldwell et al.

*Examiner Initial	ID	Document No.	Date	Name
	U273	5,672,583	09/30/1997	Chapman et al.
	U277	US 6,261,279 B1	07/17/2001	Demopulos et al.
	U279	US 6,197,325 B1	03/06/2001	MacPhee et al.
	U280	5,459,135	10/17/1995	Golub et al.
	U284	US 6,306,820 B1	10/23/2001	Bendele et al.
	U285	5,180,812	1/19/1993	Dower et al.
	U286	5,766,585	06/16/1998	Evans et al.
	U287	5,767,065	06/16/1998	Mosley et al.
	U290	US 6,214,049 B1	04/10/2001	Gayer et al.
	U291	5,674,844	10/07/1997	Kuberasampath et al.
	U292	6,034,062	03/07/2000	Thies et al.
	U293	5,403,952	04/04/1995	Hagmann et al.
	U332	5,972,880	10/26/1999	Pelletier et al.
	U334	5,860,950	01/19/1999	Demopulos et al.
	U341	5,591,740	01/07/1997	Chipman et al.
	U342	6,159,464	12/12/2000	Glorioso et al.

FOREIGN PATENT DOCUMENTS

*Examiner Initial	ID	Document No.	Publication Date	Country	Translation <u>Provided</u>	
					Yes	No
	F15	WO 94/06476 A1	03/31/1994	WIPO		
	F29	WO 96/26738 A1	09/06/1996	WIPO		
	F32	WO 96/11671 A1	04/25/1996	WIPO		
	F64	WO 99/65470 A1	12/23/1999	WIPO		
	F70	WO 99/62459A2	12/09/1999	WIPO		
	F86	WO 9824477 A1	06/11/1998	WIPO		
	F88	WO 00/62790 A2	10/26/2000	WIPO		
	F91	WO 00/73468 A1	12/07/2000	WIPO		
	F96	EP 0 428 573 B1	01/26/1994	European		
	F97	WO 01/47510 A2	07/05/2001	WIPO		
	F100	EP 0 500 556 B1	01/19/2001	European		X
	F101	WO 00/23072 A1	04/27/2000	WIPO		

*Examiner Initial	ID	Document No.	Publication Date	Country	Translation Provided	
					Yes	No
_____	F102	WO 00/25745 A2	05/11/2000	WIPO		
_____	F107	WO 00/56298 A2	09/28/2000	WIPO		
_____	F108	WO 96/34955 A1	11/07/1996	WIPO		

OTHER INFORMATION
(Including Author, Title, Date, Pertinent Pages, Etc.)

*Examiner Initial	ID	Document Information
_____	O129	Reuben, S.S., et al. "Postoperative Analgesia for Outpatient Arthroscopic Knee Surgery with Intraarticular Bupivacaine and Ketorolac," <i>Anesth. Analg.</i> 80 :1154-1157 (1995).
_____	O133	Sosnowski, M., et al. "Spinal Administration of Receptor-Selective Drugs as Analgesics: New Horizons," <i>J. Pain & Symptom Manag.</i> 5 :204-213 (1990).
_____	O181	Pierce, P.A., et al. "Dual Effect of the Serotonin Agonist, Sumatriptan, on Peripheral Neurogenic Inflammation," <i>Reg. Anesth.</i> 21 :219-225 (1996).
_____	O219	Allen, G.C., et al. "Postarthroscopy Analgesia with Intraarticular Bupivacaine/Morphine: A Randomized Clinical Trial," <i>Anesthesiology</i> 79 : 475-480 (1993).
_____	O225	Uysalel, A., et al. "Comparison of Intraarticular Bupivacaine with the Addition of Morphine or Fentanyl for Analgesia After Arthroscopic Surgery," <i>Arthroscopy</i> 11 : 660-663 (1995).
_____	O226	Ruwe, P.A., et al. "The Effect of Intraarticular Injection of Morphine and Bupivacaine on Postarthroscopic Pain Control," <i>Am. J. Sports Med.</i> 23 : 59-64 (1995).
_____	O228	Reuben, S.S., et al. "Postarthroscopic Meniscus Repair Analgesia with Intraarticular Ketorolac or Morphine," <i>Regional Anes. & Pain Man.</i> 82 :1036-9 (1996).
_____	O239	Tsai, L., et al. "Arthroscopic surgery of the knee in local anaesthesia: An analysis of age-related pathology," <i>Arch. Orthop. Trauma Surg.</i> 112 : 136-138 (1993).

*Examiner Initial	ID	Document Information
_____	O253	Wredmark, T., et al., "Arthroscopy Under Local Anaesthesia Using Controlled Pressure-Irrigation With Prilocaine," <i>J. Bone Joint Surg.</i> 64 :583-585 (1982).
_____	O289	Verschure, P.J., et al. "Responsiveness of articular cartilage from normal and inflamed mouse knee joints to various growth factors," <i>Ann. Rheum. Dis.</i> 53 : 455-460 (1994).
_____	O330	Band, C.J., et al. "Phosphatidylinositol 3'-Kinase and p70 ^{s6k} Are Required for Insulin but Not Bisperoxovanadium 1,10-Phenanthroline (bpV(phen)) Inhibition of Insulin-like Growth Factor Binding Protein Gene Expression: Evidence for MEK-Independent Activation of Mitogen-Activated Protein Kinase by bpV(phen)," <i>J. Biol. Chem.</i> 272 :138-145 (1997).
_____	O444	Huch, K., et al. "Effects Of Recombinant Human Osteogenic Protein 1 On The Production Of Proteoglycan, Prostaglandin E ₂ And Interleukin-1 Receptor Antagonist By Human Articular Chondrocytes Cultured In The Presence Of Interleukin-1 β ," <i>Arthritis & Rheum.</i> 40 :2157-2161 (1997).
_____	O447	Goldring, M.B., "Osteoarthritis and Cartilage: The Role of Cytokines," <i>Curr. Rheumatol. Rep.</i> 2 :459-465 (2000).
_____	O448	Jorgensen, C., et al. "Interleukin-4 And Interleukin-10 Are Chondroprotective And Decrease Mononuclear Cell Recruitment In Human Rheumatoid Synovium <i>In Vivo</i> ," <i>Immun.</i> 93 :518-523 (1998).
_____	O449	Sugiyama et al. "Interleukin 10 Cooperates With Interleukin 4 To Suppress Inflammatory Cytokine Production By Freshly Prepared Adherent Rheumatoid Synovial Cells," <i>Journ. of Rheum.</i> 22 :2020-6 (1995).
_____	O450	Van Roon, J.A.G., et al. "Prevention and Reversal of Cartilage Degradation in Rheumatoid Arthritis by Interleukin-10 and Interleukin-4," <i>Arthritis Rheum.</i> 39 :829-835 (1996).
_____	O453	Hollander, A.P., et al. "Human cartilage is degraded by rheumatoid arthritis synovial fluid but not by recombinant cytokines <i>in vitro</i> ," <i>Clin. Exp. Immunol.</i> 83 : 52-57 (1991).
_____	O490	Klareskog, L., et al. "Immunopathogenesis and immunotherapy in rheumatoid arthritis: an area in transition," <i>J. Intern. Med.</i> 238 : 191-206 (1995).

*Examiner Initial	ID	Document Information
_____	O502	McCarty, M.F., et al. "Niacinamide therapy for osteoarthritis--does it inhibit nitric oxide synthase induction by interleukin 1 in chondrocytes?," <i>Med. Hypotheses</i> 53 : 350-360 (1999) (Abstract Only).
_____	O503	Brittberg, M., et al. "Autologous chondrocyte transplantation," <i>Clin. Orthop.</i> 367 : S147-S155 (1999) (Abstract Only).
_____	O508	Pelletier, J.P., "The influence of tissue cross-talking on OA progression: role of nonsteroidal antiinflammatory drugs," <i>Osteoarthritis Cartilage</i> 7 : 374-376 (1999) (Abstract Only).
_____	O512	Chambers, M.G., et al. "Chondrocyte cytokine and growth factor expression in murine osteoarthritis," <i>Osteoarthritis Cartilage</i> 5 : 301-308 (1997) (Abstract Only).
_____	O516	Verschure, P.J., et al. "Articular cartilage destruction in experimental inflammatory arthritis: insulin-like growth factor-1 regulation of proteoglycan metabolism in chondrocytes," <i>Histochem. J.</i> 28 : 835-857 (1996).
_____	O518	Aigner, T., et al. "Inflammatory cytokine mediated anti-anabolic effects: a potential mechanism in rheumatoid cartilage degeneration," <i>Verh. Dtsch. Ges. Pathol.</i> 80 : 282-287 (1996) (Abstract Only).
_____	O520	Trippel, S.B., "Growth factor actions on articular cartilage," <i>J. Rheumatol. Suppl.</i> 43 : 129-132 (1995) (Abstract Only).
_____	O521	Lotz, M., et al. "Cytokine regulation of chondrocyte functions," <i>J. Rheumatol. Suppl.</i> 43 : 104-108 (1995) (Abstract Only).
_____	O523	Homandberg, G.A., et al. "High concentrations of fibronectin fragments cause short-term catabolic effects in cartilage tissue while lower concentrations cause continuous anabolic effects," <i>Arch. Biochem. Biophys.</i> 311 : 213-218 (1994) (Abstract Only).
_____	O524	Sah, R.L., et al. "Differential effects of bFGF and IGF-I on matrix metabolism in calf and adult bovine cartilage explants," <i>Arch. Biochem. Biophys.</i> 308 : 137-147 (1994) (Abstract Only).
_____	O533	Mohamed-Ali, H. "Proteolytic enzymes and the destruction of articular cartilage in arthritis and chronic polyarthritis," <i>Wien. Med. Wochenschr.</i> 141 : 77-85 (1991) (Abstract Only).

*Examiner Initial	ID	Document Information
_____	O534	Venn, G., et al., "Effects of catabolic and anabolic cytokines on proteoglycan biosynthesis in young, old and osteoarthritic canine cartilage," <i>Biochemical Society Transactions</i> , Vol. 18, pp. 973-974, 1990.
_____	O535	Lanzer, W.L., et al. "Changes in articular cartilage after meniscectomy," <i>Clin. Orthop.</i> 252 : 41-48 (1990) (Abstract Only).
_____	O540	Herman, J.H., et al. "Immunologic modulation of cartilage metabolism," <i>J. Rheumatol.</i> 14 : 83-85 (1987) (Abstract Only).
_____	O542	Hess, E.V., et al. "Cartilage metabolism and anti-inflammatory drugs in osteoarthritis," <i>Am. J. Med.</i> 81 : 36-43 (1986) (Abstract Only).
_____	O548	Vidal y Plana, R.R., et al. "Glucosamine: its importance for the metabolism of articular cartilage. 2. Studies on articular cartilage," <i>Fortschr. Med.</i> 98 : 801-806 (1980) (Abstract Only).
_____	O638	Shalom-Barak, T., et al. "Interleukin-17-induced Gene Expression in Articular Chondrocytes is Associated with Activation of Mitogen-activated Protein Kinases and NF- κ B," <i>J. Biol. Chem.</i> 273 : 27467-27473 (1998).
_____	O645	Tardif, G., et al. "Collagenase 3 production by human osteoarthritic chondrocytes in response to growth factors and cytokines is a function of the physiologic state of the cells," <i>Arthritis Rheum.</i> 42 : 1147-1158 (1999) (Abstract only).
_____	O710	Dingle, J.T. "Cartilage Maintenance in Osteoarthritis: Interaction of Cytokines, NSAID and Prostaglandins In Articular Cartilage Damage and Repair," <i>J. Rheumatol. Suppl.</i> 28 : 30-37 (1991).
_____	O719	Attur, M.G., et al. "Tetracycline Up-Regulates COX-2 Expression and Prostaglandin E ₂ Production Independent of its Effect on Nitric Oxide," <i>J. Immunol.</i> 162 : 3160-3167 (1999).
_____	O734	Blanco, F.J., et al. "Chondrocyte apoptosis induced by nitric oxide," <i>Am. J. Pathol.</i> 146 : 75-85 (1995) (Abstract only).
_____	O742	Attur, M.G., et al. "Autocrine Production of IL-1 β by Human Osteoarthritis-Affected Cartilage and Differential Regulation of Endogenous Nitric Oxide, IL-6, Prostaglandin E ₂ , and IL-8," <i>Proc. Assoc. Am. Physicians</i> 110 : 65-72 (1998).

*Examiner Initial	ID	Document Information
_____	O745	Lubberts, E. et al. "Reduction of Interleukin-17-Induced Inhibition of Chondrocyte Proteoglycan Synthesis in Intact Murine Articular Cartilage by Interleukin-4," <i>Arthritis Rheum.</i> 43 : 1300-1306 (2000).
_____	O747	Martel-Pelletier, J., et al. "Mitogen-activated protein kinase and nuclear factor κ B together regulate interleukin-17-induced nitric oxide production in human osteoarthritic chondrocytes: possible role of transactivating factor mitogen-activated protein kinase-activated protein [sic] kinase (MAPKAPK)," <i>Arthritis Rheum.</i> 42 : 2399-2409 (1999) (Abstract only).
_____	O752	Agro, A., et al. "Prostaglandin E2 enhances interleukin 8 (IL-8) and IL-6 but inhibits GM-CSF production by IL-1 stimulated human synovial fibroblasts in vitro," <i>J. Rheumatol.</i> 23 : 862-868 (1996) (Abstract only).
_____	O758	Kawamura, M., et al. "Growth factors, mitogens, cytokines, and bone morphogenetic protein in induced chondrogenesis in tissue culture," <i>Dev. Biol.</i> 130 : 435-442 (1988) (Abstract only).
_____	O773	Chandrasekhar, S., et al. "Degradative and repair responses of cartilage to cytokines and growth factors occur via distinct pathways," <i>Agents Actions Suppl.</i> 39 : 121-125 (1993) (Abstract only).
_____	O774	Harvey, A., et al. "Differential modulation of degradative and repair responses of interleukin-1-treated chondrocytes by platelet-derived growth factor," <i>Biochem. J.</i> 292 : 129-136 (1993) (Abstract only).
_____	O780	Stevens, P., et al. "Synergism of basic fibroblast growth factor and interleukin-1 beta to induce articular cartilage-degradation in the rabbit," <i>Agents Actions</i> 34 : 217-219 (1991) (Abstract only).
_____	O781	Chandrasekhar, S., et al. "Differential regulation of metalloprotease steady-state mRNA levels by IL-1 and FGF in rabbit articular chondrocytes," <i>FEBS Lett.</i> 296 : 195-200 (1992) (Abstract only).
_____	O786	Van Der Kraan, P., et al. "Role of nitric oxide in the inhibition of BMP-2-mediated stimulation of proteoglycan synthesis in articular cartilage," <i>Osteoarthritis Cartilage</i> 8 : 82-86 (2000).
_____	O815	Glasser, R.S., et al., "The Perioperative Use Of Corticosteroids And Bupivacaine In The Management Of Lumbar Disc Disease," <i>J. Neurosurg.</i> 78 : 383-387 (1993).

*Examiner Initial	ID	Document Information
_____	O844	Van den Berg, W.B., et al. "Tissue Engineering, Cells, Scaffolds, and Growth Factors: Growth factors and cartilage repair," <i>Clin. Orthop.</i> 391S :S244-50 (2001).
_____	O846	Rogachefsky, R.A., et al. "Treatment Of Canine Osteoarthritis With Insulin-Like Growth Factor-1 (IGF-1) And Sodium Pentosan Polysulfate," <i>Osteoarthritis & Cartilage</i> 1 :105-14 (1993).
_____	O847	Goldring, M.B., et al., "Etodolac Preserves Cartilage-Specific Phenotype in Human Chondrocytes: Effects On Type II Collagen Synthesis and Associated mRNA Levels," <i>Euro. J. Rheum. & Inflamm.</i> 10 :10-21 (1990).
_____	O848	Itayem, R., et al. "Ultrastructural Studies On The Effect Of Transforming Growth Factor- β 1 On Rat Articular Cartilage," <i>APMIS</i> 105 :221-8 (1997).
_____	O849	Bhargava, M.M. et al. "The Effect Of Cytokines On The Proliferation And Migration Of Bovine Meniscal Cells," <i>Am. Jour. Sports Med.</i> 27 :636-43 (1999).
_____	O855	Goldring, M.B. "Anticytokine therapy for osteoarthritis," <i>Expert. Opin. Biol. Ther.</i> 1 :817-829 (2001).
_____	O863	Nasatzky, E., et al. "Parathyroid Hormone And Transforming Growth Factor- β 1 Coregulate Chondrocyte Differentiation <i>In Vitro</i> ," <i>Endocrine</i> 13 :305-13 (2000) (Abstract Only).
_____	O864	Heiner, John P. "Bone Formation Within Acetabular Defects In Total Hip Arthroplasty," <i>Citations from Federal Research in Progress (FRP)</i> FRP 02-01 128953, NDN-049-0233-4208-2 (Date Unknown).
_____	O866	Frisbie, D.D., et al. "Metabolic And Mitogenic Activities Of Insulin-Like Growth Factor-1 In Interleukin-1-Conditioned Equine Cartilage," <i>Am. J. Vet. Res.</i> 61 :436-441 (2000).
_____	O869	Frisbie, D.D., et al. "Treatment Of Experimental Equine Osteoarthritis By <i>In Vivo</i> Delivery Of The Equine Interleukin-1 Receptor Antagonist Gene," <i>Gene Ther.</i> 9 :12-20 (2002).
_____	O876	Gatt, C.J., et al. "Preemptive Analgesia: Its Role and Efficacy in Anterior Cruciate Ligament Reconstruction," <i>Am. J. Sports Med.</i> 26 : 524-529 (1998).

*Examiner

Initial

ID

Document Information

O877

Dingle, J.T. "The Effects of NSAID on the Matrix of Human Articular Cartilages," *Z. Rheumatol.* **58**:125-129 (1999).

Examiner

Date Considered

*Examiner: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

MSK:jdg/ws